



**Annual Drinking Water Quality Report for 2015**  
***Providing Water to Power the Future of Rowan County***  
**System ID# 01-80-010**  
**January 2016**

Salisbury-Rowan Utilities is pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your source water, what it contains, and how it compares to standards set by our regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and to providing you with this information. **For questions concerning the report or your water, please contact Alan Fowler, Chemist, Salisbury-Rowan Utilities – (704) 638-5372.**

**Este reporte contiene información importante sobre la calidad de agua en su comunidad. Léelo o llame por teléfono al (704) 638-2168 para una traducción en Español, gratis.**

## **What EPA Wants You to Know**

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Salisbury-Rowan Utilities is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at: <http://www.epa.gov/lead/protect-your-family-exposures-lead#homeleadsafe>

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; and radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

### **When You Turn On Your Tap, Consider The Source**

Salisbury – Rowan Utilities’ (SRU’s) intakes are located on the Rowan – Davie - Davidson County line at the confluence of the South Yadkin River and the Yadkin River. The Yadkin Pee Dee River basin, which has a watershed classification of WS-IV, is the second largest river basin in NC, covering 7,213 square miles of which 50% is forested. Rain that falls on the eastern slopes of the Blue Ridge Mountains in Caldwell, Wilkes, and Surry Counties begins the flow to Salisbury and High Rock Lake. For more information on flow of the Yadkin River, the USGS web site is [www.usgs.org](http://www.usgs.org).

The North Carolina Department of Environmental Quality (DEQ), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate or Lower.

**The relative susceptibility rating of each source for Salisbury-Rowan Utilities was determined by combining the contaminant rating (number and location of PCSs within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area). The assessment findings are summarized in the table below:**

Source Name	Susceptibility Rating	SWAP Report Date
YADKIN RIVER	Moderate	August 2015

The complete Source Water Assessment Plan for the City of Salisbury can be viewed at:

<http://www.ncwater.org/?page=319>

To view or download the report, click on “Public Water Supply-Source Water Assessment Reports” button on the above-mentioned website. Enter “Salisbury” in blank for Public Water System Supply name, then click “Get Report” button. Next, click on Salisbury-Rowan ID# “01-80-010” to access the SWAP Report. To request a printed copy of the report, call (919) 707-9098 or email [SWAP@ncdenr.gov](mailto:SWAP@ncdenr.gov) . Please include the following information when making the request:

PWS System Name & Identification Number

Contact Name

Address

Phone Number

Note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this Consumer Confidence Report was prepared. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634.

It is important to understand that a susceptibility rating of even “higher” does not imply poor water quality. Susceptibility is an indication of a water supply’s potential to become contaminated by identified potential contaminant sources within the assessment area.

## **How Your Water Treatment Plant Works**

The Salisbury-Rowan Utilities’ Water Treatment Plant uses a pretreatment process called *Actiflo*, which is a high-rate clarification unit. Salisbury treats an annual average of 8.9 million gallons of water per day (MGD). There is off stream storage of 28 MG if the Yadkin River should ever be unsuitable for drinking water. Micro-Sand, Polymer, and Poly-Aluminum Chloride are added to the raw water as it enters the pretreatment units to begin the coagulation process. After mixing, the solids are removed by the pretreatment process. The water is allowed to settle up to 4 hours and then it is filtered. After filtration, Sodium Hypochlorite, Fluoride and Phosphate are added and the pH is adjusted using liquid lime. Fluoride is added to promote stronger teeth, and Phosphate helps to

prevent pipe corrosion in the distribution system. Solids that are removed from the raw water are de-watered and eventually reapplied to farmland in Rowan County.

## **Facts & Figures**

Salisbury-Rowan Utilities' Water Treatment Division is required to test for over 150 contaminants to make sure that the water you drink is safe. **We are pleased to report that for the calendar year of 2015, the water delivered to your homes and businesses complied with all state and federal requirements.** The following regulated contaminants were detected in our *finished* water as analyzed between January 1 and December 31, 2015 unless otherwise noted. *Finished* water is the water that leaves our treatment plant and is distributed throughout the system to your tap. The EPA and the State allow us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

<b><u>Constituent &amp; Unit</u></b>	<b><u>MCLG</u></b>	<b><u>MCL</u></b>	<b><u>Salisbury Result</u></b>	<b><u>Potential Source</u></b>
Fluoride, mg/l	4	4	0.67	Water additive which promotes strong teeth; erosion of natural deposits, discharge from fertilizer and aluminum factories.
Total Coliform Bacteria (presence or absence)	0	>= 5% present	3	Naturally present in the environment.
Lead*,ug/l	0	AL=15	ND	Corrosion of household plumbing systems; erosion of natural deposits. (100% of the samples were below the action level of 15 ug/l)
Copper*,mg/l	1.3	AL= 1.3	0.115	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives. (100% were below the action level of 1.3 mg/l)

\*Customers were asked to sample water from a tap in their residence from June-September 2014. All samples were tested for lead and copper.

Turbidity, NTU	n/a	TT	<0.3	Soil runoff
----------------	-----	----	------	-------------

Turbidity is a measure of the clarity of the sample and is caused by suspended material measured in NTUs. Many items contribute to this measurement such as silt, algae, and tiny organisms. Turbidity is used to measure the effectiveness of the water treatment process. NC regulations require continuous measurement on each filter at the water plant. The combined turbidity of all filters must be <0.3 NTU on 95% of the required measurements for each month. The highest turbidity in 2015 was 0.10 NTUs resulting in *100% compliance*.

Total THMs, ug/l	80	80	50.19 average	By-product of drinking water chlorination. Values ranged from 20 ug/l to 85 ug/l in the distribution system.
Total HAAs, ug/l	60	60	25.97 average	By-product of drinking water chlorination. Values ranged from 16.5 ug/l to 39.0 ug/l in the distribution system.

The fourth quarter of 2013, Salisbury-Rowan Utilities started monitoring under the Stage 2 Disinfection By-Product Rule, replacing the previous Stage 1 Disinfection By-Product Rule. The rule no longer requires a running annual average of all TTHMs (Total Trihalomethanes) and HAAs (Haloaceticacids) values, but a locational running annual average of these values. The averages above are an average of all locational running averages.

Total TOC, mg/l                      n/a                      TT                      1.23                      Naturally present in the environment. Removal Ratio Values ranged from <1.0 to 1.8.

Total Organic Carbon (TOC) provides a medium for the formation of disinfection byproducts (DBPs) including Total Trihalomethanes (TTHMs) and Total Haloacetic Acids (HAAs). SRU, in complying with requirements of the EPA Disinfectants & Disinfection Byproducts Rule – Stage 1 performed testing on paired samples of our “source” water and finished water for % Total Organic Carbon (TOC) Removal. The Treatment Plant was able to remove between 29% and 64% with an average removal rate of 37.8 % during the 2015 calendar year meeting step 1 compliance.

## **Key to Unit Abbreviations**

mg/l	Milligram per liter or parts per million. (One part per million or milligram per liter is like a single penny in \$10,000)
ug/l	Micrograms per liter or parts per billion. (or a single penny in \$10,000,000)
MCL	Maximum Contaminant Level: the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal: the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
AL	Action Level: the concentration of a contaminant that triggers treatment or other requirements that a water system must follow. Action levels are reported at the 90 <sup>th</sup> percentile for homes at greatest risk.
TT	Treatment Technique: a required process intended to reduce the level of a contaminant in drinking water.
NTU	Nephelometric Turbidity Units. Turbidity in excess of 5 NTU is just noticeable to the average person.
n/a	Information not applicable/not required for that particular water system or for that particular rule
ND (Non-detectable)	Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.
MRT	Maximum Residence Time. Location in the distribution system where water age is the greatest.
pCi/l (picoCuries/Liter)	Unit to measure Radon

**Extra Note: MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.**

### **Physical & Mineral Characteristics** **for the 2015 calendar year**

The following constituents analyzed in your water are indicators of the appearance, taste and mineral content of the drinking water as the water leaves the water plant and is delivered to your tap.

<b><u>Inorganic constituent &amp; Unit of Measure</u></b>	<b><u>Annual Average</u></b>
pH, standard units	7.0
Alkalinity, mg/l	24.9
Aluminum, mg/l	<0.01
Conductivity, micromhos/cm	126.7
Hardness, mg/l	27.3
Orthophosphate, mg/l	0.96
Sodium, mg/l	11.79
Manganese, mg/l	0.002
Iron, mg/l	0.016
Fluoride, mg/l	0.67
Chlorine, mg/l	1.28

### **Distribution System**

Each month, the distribution system is checked for water quality compliance. Samples are checked to maintain a 0.2 mg/l chlorine residual in the system. To ensure that bacteria and other harmful organisms are removed by physical processes and disinfection

chemicals and no contamination has entered the system, samples are also checked for total coliform. 3 samples in 2015 tested positive for Total Coliform. All repeat samples tested negative for Total Coliform.

## **Salisbury-Rowan Utilities (SRU) Contacts**

SRU Administration	1 Water Street	(704) 638-5205
Water Plant Supervisor	Keith Bowersox	(704) 638-4480
Water Quality Concerns	Water Lab	(704) 638-5372
Water Bills & Service Reconnection	Customer Service	(704) 638-5300
Line Leaks	Systems Maintenance	(704) 638-5390
Emergencies (after hours)		(704) 638-5339
New Service Connections	Development Services	(704) 638-5208
Facility Tours, Civic Club & Class Room Presentations	Jenny Waisner	(704) 638-4476

City of Salisbury website at [www.salisburync.gov](http://www.salisburync.gov)

**1. Concernimientos sobre la calidad de su agua?**

Si usted nota un cambio en el sabor, olor o color de su agua, llame al (704) 638-5372 de 8:30am - 5:00 pm

**2. Cuenta/factura de agua o conexión de servicio?**

Si tiene una pregunta sobre su cuenta/factura de agua o si su agua ha sido desconectada llame al (704) 638-5208

**3. Nuevo servicio / Conexión**

Si acaba de trasladarse a una nueva casa y necesita servicio de agua llame al (704) 638-5208

**4. Emergencias y escape de agua, después de las 5 pm**

Si ve que hay agua que esta saliendo del piso, o poca presión de agua

En su casa u otros problemas que no pueden esperar hasta las horas regulares que son de 8:30 am – 5: 00 pm , llame al (704) 638-5339



## **Update on SRU Projects**

Salisbury-Rowan Utilities continued testing and evaluating select water metering technologies that enhance our ability to provide excellent customer service, while also improving our operational efficiencies and reducing the utility's carbon footprint. Over the next few years, SRU plans to implement an Advanced Metering Infrastructure (AMI) project that will complete the upgrade of all water meters in the distribution system.

Continued efforts to reduce inflow and infiltration into the sanitary sewer collection system this past year included several projects to evaluate in-situ rehabilitation alternatives to traditional "dig and replace" construction methods. SRU replaced a portion of gravity sanitary sewer on Jackson Street in Salisbury utilizing a contractor that specializes in pipe bursting. Additionally, a specialty contractor installed a polymeric lining system to six manholes along the Crane Creek outfall.

Utility staff ramped up efforts this past year in regards to preventive maintenance in the sanitary sewer collection system. Utilizing autonomous robotic cameras, over 200,000 linear feet of gravity sewer lines were inspected and evaluated. Likewise, pre-maintenance inspections of gravity sewer lines were completed via a quick acoustic inspection tool that helps crews focus on areas of the collection system that need attention, while not wasting time and effort on areas that do not.

SRU, working to safeguard and protect the water supply and interests of all its customers, continues to participate in the Federal Energy Regulatory Commission (FERC) relicensing of Alcoa's Yadkin (Hydropower) Project. SRU also protects its customers and their water supply during periods of drought by conducting regular monitoring of the water supply to track the flow and volume of the Yadkin River and by encouraging wise use of water. A copy of the water shortage response plan can be found on our webpage at <http://www.salisburync.gov/utilities/>.

## **Contract Operated Systems**

**The Town of East Spencer** (ID# 01-80-060) purchases water from Salisbury-Rowan Utilities. SRU operates and monitors this system as well. Locations in the distribution system were tested monthly for coliform bacteria. All results for 2015 were negative. Contaminants that were detected between January 1 and December 31, 2015 are listed below:

<u>Constituent &amp; Unit</u>	<u>Violation (Y/N)</u>	<u>MCLG</u>	<u>MCL</u>	<u>East Spencer Result</u>	<u>Potential Source</u>
Total THM's, ug/l	N	80	80	55.0 average	By- product of drinking water chlorination. Results in the system ranged from 24.0-82.0 ug/l.
Total HAA's, ug/l	N	60	60	19.1 average	By- product of drinking water chlorination. Results in the system ranged from 8.5-26.0 ug/l.
The fourth quarter of 2013, East Spencer started monitoring under the Stage 2 Disinfection By-Product Rule, replacing the previous Stage 1 Disinfection By-Product Rule. The rule no longer requires a running annual average of all THM/HAA values, but a locational running annual average of these values.					
Lead*, ug/l	N	0	AL=15	< 0.003 mg/l	Corrosion of household plumbing systems; erosion of natural deposits. (100% were below the action level of 15 ug/l)
Copper*, mg/l	N	1.3	AL=1.3	< 1.3 mg/l	Corrosion of household plumbing systems; erosion of natural deposits; (100% were below the action level of 1.3 mg/l)

\*From June to September of 2013, homes in East Spencer built between 1982 & 1986 were sampled for lead due to the likelihood of the use of lead solder in pipes. Based on the analytical results collected during this sampling period, zero of the total ten homes tested exceeded the 90<sup>th</sup> Percentile Lead Action Level (15 ug/l). Lead usually enters drinking water as a result of corrosion — the wearing away of materials containing lead in a water distribution system or household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines).

**The Town of China Grove** (ID# 01-80-040) purchases water from Salisbury-Rowan Utilities. SRU operates and monitors this system as well. Locations in the distribution system were tested monthly for coliform bacteria. One result tested positive for Total Coliform in 2015. All repeat samples tested negative. Contaminants that were detected between January 1 and December 31, 2015 are listed below:

<u>Constituent &amp; Unit</u>	<u>Violation(Y/N)</u>	<u>MCLG</u>	<u>MCL</u>	<u>China Grove Result</u>	<u>Potential Source</u>
Total THM's, ug/l	N	80	80	56.5	By- product of drinking water chlorination. Results in the system ranged from 30.0-107 ug/l.
Total HAA's, ug/l	N	60	60	24.4	By-product of drinking water chlorination. Results in the system ranged from 16.1-31.4 ug/l.

The fourth quarter of 2013, China Grove started monitoring under the Stage 2 Disinfection By-Product Rule, replacing the previous Stage 1 Disinfection By-Product Rule. The rule no longer requires a running annual average of all THM/HAA values, but a locational running annual average of these values.

Lead*, ug/l	N	0	AL=15	<0.003	Corrosion of household plumbing systems; erosion of natural deposits. (100% were below the action level of 15 ug/l)
-------------	---	---	-------	--------	--

Copper*, mg/l	N	1.3	AL=1.3	0.203	Corrosion of household plumbing systems; erosion of natural deposits (100% were below the action level of 1.3 mg/l)
---------------	---	-----	--------	-------	--

\*From June to September of 2013, 20 homes in China Grove were sampled for lead due to the likelihood of the use of lead solder in pipes. Based on the analytical results collected during this sampling period, zero of the twenty homes tested exceeded the 90<sup>th</sup> Percentile Lead Action Level (15 ug/l). Lead usually enters drinking water as a result of corrosion — the wearing away of materials containing lead in a water distribution system or household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines).

**Well#3 (PO1) (Taken offline 8/2015)\***

<b><u>Constituent &amp; Unit</u></b>	<b><u>Violation</u></b>	<b><u>MCLG</u></b>	<b><u>MCL</u></b>	<b><u>Result</u></b>	<b><u>Potential Source</u></b>
Dalapon *,mg/l	N	0.2	0.2	<0.001	Runoff from herbicide used on rights of way
Fluoride, mg/l	N	4.0	4.0	0.10	Erosion of natural deposits
Sodium, mg/l	N	n/a	n/a	13.17	Erosion of natural deposits
Sulfate,mg/l	N	250.0	250.0	61.5	Erosion of natural deposits
Combined Radium(226&228),pCi/l	N	0	5.0	3.0	Erosion of natural deposits
Combined Uranium,pCi/l	N	0	30	2.7	Erosion of natural deposits

\*Sampled in 1st quarter 2012; Granted Triennial Monitoring 2/22/12.

**Well #7 (PO4) (Taken offline 11/2014)\***

<b><u>Constituent &amp; Unit</u></b>	<b><u>Violation</u></b>	<b><u>MCLG</u></b>	<b><u>MCL</u></b>	<b><u>Result</u></b>	<b><u>Potential Source</u></b>
Sodium, mg/l	N	n/a	n/a	14.45	Erosion of natural deposits
Sulfate, mg/l	N	250.0	250.0	17.70	Erosion of natural deposits
Nitrate,mg/l	N	10.0	10.0	1.13	Runoff from fertilizer use
Combined Radium(226&228),pCi/l	N	0	5.0	0.9	Erosion of natural deposits

**Well #8 (PO5) (Taken offline 10/2015)\***

<b><u>Constituent &amp; Unit</u></b>	<b><u>Violation</u></b>	<b><u>MCLG</u></b>	<b><u>MCL</u></b>	<b><u>Result</u></b>	<b><u>Potential Source</u></b>
Sodium, mg/l	N	n/a	n/a	14.64	Erosion of natural deposits
Sulfate, mg/l	N	250.0	250.0	52.20	Erosion of natural deposits
Combined Radium(226&228), pCi/l	N	0	5.0	3.5	Erosion of natural deposits
Combined Uranium, pCi/l	N	0	30	0.9	Erosion of natural deposits
Gross Alpha (excluding Radon And Uranium), pCi/l	N	0	15	8.2	Erosion of natural deposits

Gross Alpha(including Radon And Uranium), pCi/l	N	0	15	6.0	Erosion of natural deposits
Radium-228, pCi/l	N	0	2	1.1	Erosion of natural deposits

**\*All wells taken off-line as of 10/2015**

### **Source Water Assessment Program for China Grove: ID (01-80-040)**

<b>Source Name</b>	<b>Susceptibility Rating</b>	<b>SWAP Report Date</b>
Well #3	Moderate	August 2015
Well #8	Moderate	August 2015

**It is important to understand that a susceptibility rating of even “higher” does not imply poor water quality. Susceptibility is an indication of a water supply’s potential to become contaminated by identified potential contaminant sources within the assessment**